

Serial No. 09/932,459
Amdt. dated June 1, 2005
Reply to Office Action of February 4, 2005

Docket No. HI-0035A

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-10 (Canceled)

11. (Currently Amended) A method for inserting a protocol data unit (PDU) a length indicator in a radio link control (RLC) layer Length Indicator indicating that a previous PDU ends at the end of a last SDU of the PDU in an RLC of a radio communication system where a PDU mode is used in a protocol structured RLC layer for data transmission, comprising:

detecting that whether a previous PDU ends at the end of a last segment of a service data unit (SDU) ends at the end of a previous the PDU;

checking whether a length indicator of the previous PDU has a first length indicator indicating indicates that the previous PDU ends at the end of the last segment of the SDU of the PDU; and

inserting in the current a PDU a second Length Indicator if the length indicator indicating of a previous PDU fails to indicate that the last segment of the previous PDU ends at

Serial No. 09/932,459
Amdt. dated June 1, 2005
Reply to Office Action of February 4, 2005

Docket No. HI-0035A

the end of last SDU ends at the end of the previous PDU according to the checking result only
if the previous PDU does not have the first indicator of the PDU.

12-29 (Canceled)

30. (Currently Amended) A method of converting ~~a~~-data received from ~~unit~~ of an upper layer into ~~a~~current data ~~unit~~units of a lower layer having at least one fixed size, the method comprising:

including a last segment of a ~~the~~ data unit of the upper layer into ~~the~~a current data unit of the lower layer; and

including a second indicator into a following data unit of the lower layer when an end of the last segment of the data unit of the upper layer is included within the current data unit of the lower layer and a first indicator indicating the end of the last segment of the data unit of the upper layer is not included within the current data unit of the lower layer, wherein the second indicator indicates that the end of the last segment of the data unit of the upper layer is included within the current data unit of the lower layer.

31. (Previously Presented) The method of claim 30, wherein the data unit of the upper layer is a service data unit (SDU).

Serial No. 09/932,459
Amdt. dated June 1, 2005
Reply to Office Action of February 4, 2005

Docket No. HI-0035A

32. (Previously Presented) The method of claim 31, wherein the first indicator is to indicate the last octet of each service data unit (SDU) ending within the current data unit of the lower layer.

33. (Currently Amended) The method of claim 31, wherein the second indicator is a length indicator indicating that the end of the last segment of the service data unit (SDU) within the current data unit of the lower layer includes the end part of the data unit of the upper layer ends at an end of the current data unit of the lower layer and has a predefined value.

34. (Previously Presented) The method of claim 30, wherein the current data unit of the lower layer and the following data unit of the lower layer are a protocol data unit (PDU) respectively.

35. (Previously Presented) The method of claim 34, wherein the protocol data unit (PDU) is an unacknowledged mode (UMD) protocol data unit (PDU) or an acknowledged mode (AMD) protocol data unit (PDU).

36. (Previously Presented) The method of claim 30, wherein the lower layer is a radio link control (RLC) layer.

Serial No. 09/932,459
Amdt. dated June 1, 2005
Reply to Office Action of February 4, 2005

Docket No. HI-0035A

37. (Currently Amended) The method of claim 30, wherein the first indicator is a length indicator indicating that indicates the end of the data unit of the upper layer within the data unit of the lower layer.

38. (Previously Presented) The method of claim 30, wherein the second indicator is predefined as “0”.

39. (Previously Presented) The method of claim 30, wherein the second indicator is placed as the first length indicator in the following data unit of the lower layer.

40. (Canceled)

41. (Currently Amended) The method of claim 30, further comprising:
padding a remained portion of the current following data unit of the lower layer
after including the last segment of the data unit of the upper layer; and
including a predefined third indicator into the current following data unit of the lower layer, wherein the predefined third indicator includes padding information with respect to the padded portion.

Serial No. 09/932,459
Amdt. dated June 1, 2005
Reply to Office Action of February 4, 2005

Docket No. HI-0035A

42. (Previously Presented) The method of claim 30, wherein each of the current data unit of the lower layer and the following data unit of the lower layer comprises, a header portion having a data sequence number, an indicator portion indicating lengths related to the data unit of the upper layer, and a data portion including the data unit of the upper layer.

43. (Currently Amended) A mobile communication system having an upper layer and a lower layer, in which a data received from ~~unit of~~ the upper layer is converted into ~~a~~ current data ~~unit~~ units of the lower layer having at least one fixed size, the system comprising:

means for including a last segment of a ~~the~~ data unit of the upper layer into ~~the~~ a current data unit of the lower layer; and

means for including a second indicator into a following data unit of the lower layer when an end of the last segment of the data unit of the upper layer is included within the current data unit of the lower layer and a first indicator indicating the end of the last segment of the data unit of the upper layer is not included within the current data unit of the lower layer, wherein the second indicator indicates that the end of the last segment of the data unit of the upper layer is included within the current data unit of the lower layer.

44. (Previously Presented) The system of claim 43, wherein the data unit of the upper layer is a service data unit (SDU).

Serial No. 09/932,459
Amdt. dated June 1, 2005
Reply to Office Action of February 4, 2005

Docket No. HI-0035A

45. (Previously Presented) The system of claim 44, wherein the first indicator is to indicate the last octet of each service data unit (SDU) ending within the current data unit of the lower layer.

46. (Currently Amended) The system of claim [[44]]43, wherein the second indicator is a length indicator indicating that the end of the last service-segment of the data unit (SDU) ~~within the current data unit of the lower layer includes the end part of the data unit of the upper layer ends at an end of the current data unit of the lower layer.~~

47. (Previously Presented) The system of claim 43, wherein the current data unit of the lower layer and the following data unit of the lower layer are a protocol data unit (PDU) respectively.

48. (Previously Presented) The system of claim 47, wherein the protocol data unit (PDU) is an unacknowledged mode (UMD) protocol data unit (PDU) or an acknowledged mode (AMD) protocol data unit (PDU).

49. (Previously Presented) The system of claim 43, wherein the lower layer is a radio link control (RLC) layer.

Serial No. 09/932,459
Amdt. dated June 1, 2005
Reply to Office Action of February 4, 2005

Docket No. HI-0035A

50. (Currently Amended) The system of claim 43, wherein the first indicator is a length indicator indicating that indicates the end of the data unit of the upper layer within the data unit of the lower layer.

51. (Previously Presented) The system of claim 43, wherein the second indicator is predefined as “0”.

52. (Previously Presented) The system of claim 43, wherein the second indicator is placed as the first length indicator in the following data unit of the lower layer.

53. (Canceled)

54. (Currently Amended) The system of claim 43, further comprising:
means for padding a remained portion of the current data unit of the lower layer after including the last segment of the data unit of the upper layer ~~into the current data unit of the lower layer;~~ and

means for including a predefined third indicator into the current data unit of the lower layer, wherein the predefined third indicator includes padding information with respect to the padded portion.

Serial No. 09/932,459
Amdt. dated June 1, 2005
Reply to Office Action of February 4, 2005

Docket No. HI-0035A

55. (Previously Presented) The system of claim 43, wherein each of the current data unit of the lower layer and the following data unit of the lower layer comprises, a header portion having a data sequence number, an indicator portion indicating lengths related to the data of the upper layer, and a data portion including the data of the upper layer.